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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,036	11/17/2003	Hideo Hagiwara	S11.33114CC6	1139

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EXAMINER

CHU, JOHN S Y

ART UNIT PAPER NUMBER

1752

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/713,036

Applicant(s)

HAGIWARA ET AL.

Examiner

John S. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3,4,10-13,17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 3,4,10-13,17 and 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☒ Certified copies of the priority documents have been received in Application No. 08/299,628.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/17/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This Office action is in response to the application filed November 17, 2003.

#### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

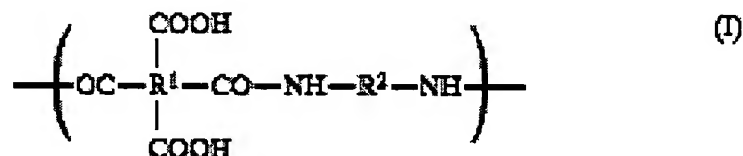
Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 3, 4, 10-13, 17, 19-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11, 14-21, 24, and 28 of U.S. Patent No. 5,856,059. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons:

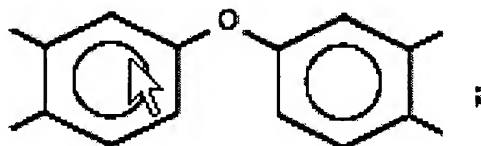
3. The claim 1 of U.S. Patent 5,856,059 recites the following:

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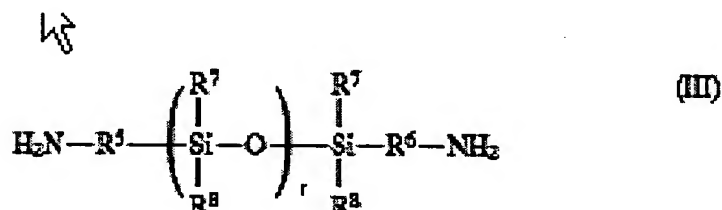
1. A photosensitive resin composition which consists essentially of (A) a polyamic acid having at least a recurring unit represented by the formula (I):



wherein  $\text{R}^1$  represents



and  $\text{R}^2$  represents a divalent organic group, wherein the polyamic acid includes a reaction product of an acid component comprising oxydiphthalic acid or oxydiphthalic anhydride with a diamine, and wherein the diamine contains a diaminopolysiloxane represented by the formula (III):



wherein  $\text{R}^5$  and  $\text{R}^6$  each represent a divalent hydrocarbon group,  $\text{R}^7$  and  $\text{R}^8$  each represent a monovalent hydrocarbon group,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$  and  $\text{R}^8$  each may be the same or different, and  $t$  represents an integer of 1 to 5, and optionally, the polyamic acid having at least one other recurring unit which is a reaction product of said diamine with at least one other tetracarboxylic dianhydride; (B) an acryl compound having an amino group; and (C) a photoinitiator for an i-line stepper, the composition transmitting light of the i-line stepper.

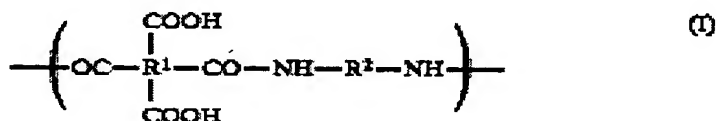
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The current claims of 1 recite the following:

10. (Currently Amended) A photosensitive resin composition which comprises (1) a polyimide precursor ~~formed from produced using (a) an oxydiphthalic acid or acid anhydride thereof as a reactant for forming the polyimide precursor, and (b) at least one diamine selected from the group consisting of diaminodiphenyl ether, diaminodiphenyl sulfone, metaphenylene diamine, p-phenylenediamine, p-xylylenediamine, diaminonaphthalene, dimethylbenzidine, dimethoxybenzidine, diaminodiphenylmethane, diaminodiphenylsulfide, benzophenonediamine, bis((aminophenoxy)phenyl)sulfone, hexafluoro-bis(aminophenyl)propane, bis((aminophenoxy)phenyl)propane, dimethyl-~~  
  
~~diaminophenyl-methane, tetramethyl-diaminodiphenylmethane, bis((aminophenoxy)phenyl) sulfone, bis(aminophenyl)propane and diaminopolysiloxane with a diamine,~~ (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20  $\mu\text{m}$  thick film thereof has a transmittance, at 365nm, of at least 40%.

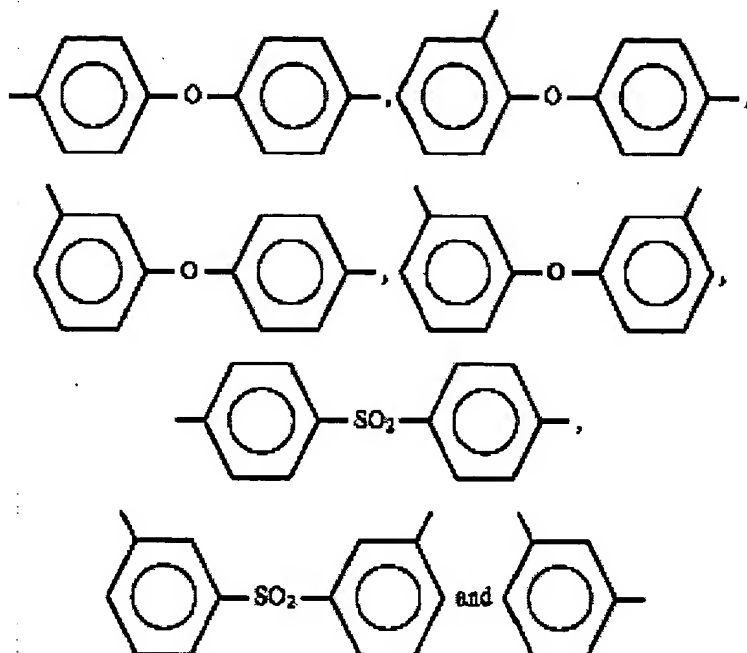
Claims 21 and 24 of HAGIWARA et al '059 rendered obvious under the judicially created doctrine of obviousness-type double patenting, claim 10 by claiming a polyimide precursor having the following formula:

**21. A photosensitive resin composition which comprises (A) a polyamic acid having at least a recurring unit represented by the formula (I):**



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wherein  $R^2$  is defined as:



from the structures above, a diaminodiphenyl ether is required to be reacted with a dianhydride to give the polyimide precursor claimed, thus meeting the new scope of claim 10. The examiner asserts that the recited property characteristics as claimed for a 20  $\mu\text{m}$  thick film having a transmittance, at 365 nm of at least 40% is inherently met by the claimed invention of HAGIWARA et al '059 because the same ingredients are used because the property characteristics being inseparable from the compound would give the same transmittance as claimed, unless shown otherwise by objective evidence under Rule 1.132.

The judicially created doctrine of obviousness-type double patenting rejection may be overcome by a proper terminal disclaimer for this new application number as done in the parent case 09/482,859.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 4, 10, 11, 13, 14, and 21-22 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by HAGIWARA ET AL.

10. (Currently Amended) A photosensitive resin composition which comprises (1) a polyimide precursor ~~formed from produced using (a) an oxydiphthalic acid or acid anhydride thereof as a reactant for forming the polyimide precursor, and (b) at least one diamine selected from the group consisting of diaminodiphenyl ether, diaminodiphenyl sulfone, metaphenylene diamine, p-phenylenediamine, p-xylylenediamine, diaminonaphthalene, dimethylbenzidine, dimethoxybenzidine, diaminodiphenylmethane, diaminodiphenylsulfide, benzophenonediamine, bis((aminophenoxy) phenyl)sulfone, hexafluoro-bis(aminophenyl)propane, bis((aminophenoxy)phenyl)propane, dimethyl-~~  
  
~~diaminophenyl-methane, tetramethyl-diaminodiphenylmethane, bis((aminophenoxy)phenyl) sulfone, bis(aminophenyl)propane and diaminopolysiloxane with a diamine,~~ (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20  $\mu\text{m}$  thick film thereof has a transmittance, at 365nm, of at least 40%.

HAGIWARA ET AL anticipates the claimed invention at Examples 2, 3, 6, 8, 9, 13 and 14, found in Table 1 of column 52, lines 12-46. The polyimide precursor polymers as seen in the examples above include those disclosed in Synthesis Examples 7, 8, 11, 13, 14, 18 and 19. The polyamic acid is a condensation product of an oxyphthalic acid and 4,4'-diamino diphenyl ether wherein the polyamic acid is in a composition with a polymerizable unsaturated compound known as tetraethylene glycol diacrylate (A-4G) and a photoinitiator of 4,6 dimethyl-7-ethylaminocoumarin.

Any objective evidence presented in the case measuring the transmittance under the same circumstances showing a different transmittance may serve as evidence to overcome the rejection under 35U.S.C. 102(e). The examiner further notes the arguments by applicant wherein applicants have asserted that the current application to 10/713036 is commonly owned by Hitachi Chemical Co., Ltd, which would disqualify the U.S. Patent No. 5,472,823 a prior art under 35 U.S.C. 103, with respect to the presently claimed subject matter. The examiner notes this argument, however the current rejection is under 35 U.S.C. 102(e) which is not disqualified even if the application and the prior art are commonly owned. Here the invention is to another and is clearly anticipated by the prior art working example and is properly rejectable under 35 U.S.C. 102(e).

6. Claim 23 is allowed.

None of the prior art references disclose the use of a hydroxyl containing diamine used to make a polyimide precursor in a negative working composition with an addition-polymerizable compound and a photoinitiator coated at a thickness of 20  $\mu\text{m}$  and has a transmittance, at 365 nm of at least 40%.



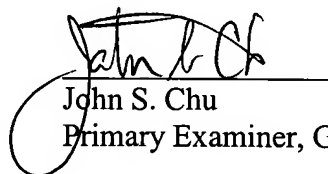
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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John S. Chu  
Primary Examiner, Group 1700

J.Chu  
December 6, 2004